

In closing our notice of Dr. Ferrier's book, we cannot do so without expressing our high sense of its value. Its spirit is admirable. The style is simple and clear. The thought is healthy and unusually correct. One of the best features about the book is its *suggestiveness*. On the whole we can safely pronounce it the most valuable contribution by any one individual to the physiology of the brain, made since the publication of the researches of Flourens. And this judgment is passed after a critical comparison of this work with that of Dr. Hitzig's, which was reviewed at length in an earlier volume of this JOURNAL. In its production, Dr. Ferrier has taken a high rank among living physiologists, and is secure of being assigned an honorable place in the history of physiology. We shall look with much interest for his promised work on the "Diseases of the Brain."

II.—PUTNAM-JACOBI: REST FOR WOMEN.

THE QUESTION OF REST FOR WOMEN DURING MENSTRUATION.
The Boylston Prize Essay of Harvard University for 1876.
Illustrated. By Mary Putnam-Jacobi, M.D. New York.
G. P. Putnam's Sons. 1877. 202 pages.

In a prize essay one naturally looks for extraordinary merit, and in the essay before us we find it. Its two hundred and thirty-two pages are replete with prize thought, in reply to the inquiry, "Do women require mental and bodily rest during menstruation?"

The first of the six sections is introductory and historical, the first subject considered being that of sex as a limitation. The development of sex, as is well known, is a mark of progress from a lower to a higher order of life, whether vegetable or animal. But the author shows that this law has hitherto been applied, not to sex as such, but to the *kind* of sex, and that kind is the masculine. "Not the accidents of the sex or the abnormal exercise of its functions, but the *sex itself* is regarded as a pathological fact." The medical literature on the subject abounds in such expressions as "morbid condition," "natural infirmity," etc. "The morbid effects of menstruation," according to the authorities, are manifold and grave, even to the extent of "temporary insanity," as Storer would say.

Under this head of "morbid effects," the author shows that the modern doctrine of King, viz., that menstruation is a disease of civilization, had its origin with Roussell, as early as 1805. It is, as the author of the essay states, quite in contrast with

the "plethoric theory," held from the most ancient until comparatively modern times. The first advocates of the plethoric theory considered menstruation analogous to the other spontaneous evacuations, and that the body was purified thereby—the uterus being the sewer of the system, according to Kreiger. Hippocrates explains the plethora by the loose texture of the flesh in women, so much fluid being absorbed by these loose tissues as to make an evacuation necessary, whereas, in men the excess of fluid is dissipated by muscular exercise. Boerhaave and Haller hold that at the time of puberty more blood is manufactured than is needed for individual growth. Burdach makes it depend upon an excess of formative power. We dwell upon this plethoric theory, because it is a modification of this theory that is adopted by the author.

We consider this whole history of great importance. In the first place, we seldom find one so complete and so well stated, and then it is important, as showing the great difference of opinion of great authorities concerning a question of such vital importance, involving, as it does, the whole question of reproduction. As to the source of the menstrual blood, Wagner considers it the formative material destined for the development of the embryo, and that its weight during ten months is exactly the weight of the foetus at term. This is not exactly true, and yet, in a general way, according to the argument of the essay, pregnancy does represent the integral sum of the suppressed menstruations. To go back of this again and ask the source of this excess of formative material, Astruc answers that it is that material, which, previous to puberty, has been used for growth.

In short, from Hippocrates to Burdach, this more or less modified theory of plethora prevailed, and the excess of nutritive force was accounted for by the cessation of growth and the deficiency of muscular force. Not till 1845, the writer affirms, the time of the discovery of ovulation, were these conditions of nutrition dropped out of the explanation of the phenomena. And now, for the first time, the *periodicity* of menstruation is considered a morbid process, unlike any other physiological process of the body. Under the head of dangers attending this physiological process, we find a formidable list. To use the author's language, "One of the most essential apparent peculiarities of the menstrual process, its periodicity, that formerly was supposed to indicate a periodical increase in the vital forces of the female organism, has come to be considered as a mark of constantly recurring debility, a means of constantly recurring exhaustion, demanding rest as decidedly as a fracture or a paralysis."

Naturally enough, the next question considered is women in industry. For, if it be true that menstruation is an infirmity requiring rest, then justice to women demands that the industries of women should be arranged with reference to this necessity. But what do we find? Women working throughout the

world, without any attempt to secure rest. It seems that the ideal society of the poet, "where men must work and women must weep," has never been realized, but that both must work, has been realized. According to Beaulieu, quoted by the author, the man has never been able to provide for the family and leave the woman to look after the house and the education of the children. The workshop of Europe is a most ancient institution, frequently managed by women. It seems, too, that in "the trades corporations, contrary to public opinion, were arranged to include women." In Great Britain, three-fourths of the unmarried and one-seventh of the married are engaged in independent or isolated labor, to say nothing of those who assist in various directions. In the United States, one-sixth of the entire female population are laboring in the paid industries of the country.

This does not include women who are classed as married or housekeeping. The most eminent philanthropists and hygienists, such as Simon and Hirt, declare it "impossible and unnecessary to attempt to frame regulations in accordance with the supposed exigencies of this physiological process." "A history of female labor would be a history of industry itself," says our author; yet it may be the habit of the world is all wrong in this regard, as it has been in many another. Be that as it may, the fact exists that modern society can not "yield to nature her inexorable demand for rest during one week out of every four, in the adult life of women."

Under the head of importance of rest, the author says truly, it is difficult to ask the question with precision. Granting rest is necessary, we might ask, for what purpose is it necessary? The preservation of life? Certainly not; for everywhere and in all ages women have continued to work and to live. But perhaps it is "necessary for the attainment of a higher standard of health, or the avoidance of certain disease." If so, how necessary? Is it as necessary as sleep? If so, persons should suffer as much for the want of one as for the other. It should be shown that lack of this rest, as lack of sleep, is sufficient to deteriorate the health in the absence of all other complications, and the degree of health attained ought to correspond with the amount of rest obtained.

Then comes the question of duration. How long is it necessary to rest? Here the author finds a singular discrepancy between the claims of theories and the habit of practice. It is not found that the degree of rest required increases with the severity of the occupation. The author suggests that it may be possible that the alleged inferiority of woman's work is due to this infirmity of the sex, and that complete rest would raise the quality of woman's work to the level of man's, as suggested by Dr. Clarke. This question of rest, then, is one of profound import, and well deserves the serious, careful investigation the author has made.

The second section is devoted to statistics. First of all, there is shown to be a great difference in statistics. It is easy to answer the question pain or no pain, as Brierre de Boismont has answered it, but to compare the absence or presence of pain with family history, occupation, age, etc., is quite a difficult task; one which the author has accomplished most creditably.

A thousand tables were prepared, comprising ten questions bearing upon hereditary, studies, occupation, exercise, duration of school-hours, etc. Two hundred and sixty-eight answers were received, and the tables subjected to close analysis and comparison, after which the summary of the results is given as follows:

1. Thirty-five per cent. of the whole number of cases are completely free from even discomfort during menstruation; while fifty-nine per cent. are not troubled sufficiently to interrupt their daily avocation. As regards the forty per cent. who do suffer, rest is as desirable as during any other kind of pain.

2. Of the painful cases, fifty-three per cent. were such from the beginning, while forty-six per cent. were acquired. The author points out the importance of this distinction with reference to occupation. No occupation begun after the establishment of the disorder, could possibly be the cause of the disorder; hence, study at school is the only occupation that can be considered a cause.

3. Eighteen per cent. of the class (pain) received very little education; while of the class (painless) none are so classified. The average for beginning school is younger in the class (pain). No reliable conclusion can be drawn from the average age of leaving school, as it is about the same for both classes. But the proportion of those who pursue advanced studies beyond the age of twenty-two, is sixteen per cent. in the first class (painless), and only eight and a half per cent. in the second class (pain). Hence, the important deduction, the highest education is most favorable to menstrual health; while the ornamental education is most favorable to menstrual disease. (The ornamental excludes Latin and the higher mathematics.)

4. It is demonstrated that the majority of all the cases have too little exercise during childhood; but the class who never had pain exercised a great deal more than the other.

5. The contrast in family history is remarkable, being good in 63½ per cent. of those who have healthy menstruation, while it is good in only 38 per cent. of those who have diseased menstruation, whether congenital or acquired. Thus is family history made accountable for what otherwise might be charged to occupation.

6. Capacity for exercise was nearly always in inverse proportion to the habit of pain.

7. Persons without occupation suffer at menstruation in a much larger proportion than those who are occupied. "Social life," ornamental education and celibacy seem to accompany each other.

8. Marriage is much more opposed than celibacy to menstrual pain.

As to the question of rest, the author finds it impossible to decide its influence in preventing suffering, because, according to the tables, the habit of resting was only acquired after the pain was established.

From these statistics it is proved that freedom from menstrual suffering is in proportion to

1. The vigor of childhood and family health. 2. Degree of exercise during school-life. 3. To the thoroughness and extension of mental education. 4. To the general health and capacity for exercise maintained after school-life. 5. To the steadiness of occupation. 6. To marriage at a suitable time.

The most important question—the question of the influence of rest—is unanswered, except that in a large majority of cases rest was superfluous.

These deductions are valuable according to the estimate which is placed upon statistics in general. Some great authorities, such as Trousseau, have little faith in conclusions derived from such data. They look upon statistics as empiricism formulated. We can only say that the writer of the essay has used the statistic line of argument in the fairest possible way, and a study of the tables will well repay one who is in search of models in that line. The sifting process of analysis and comparison is most thoroughly accomplished.

This summary, as the author states, suggests several questions which are answered after discussing the theories of menstruation and deciding upon the one most in accord with the facts which have been deduced. The principal question, which is also the principal question of the essay, is whether there is any thing in the nature of menstruation that would make rest necessary, even without pain. Of course the answer depends upon the theory of menstruation.

Of these theories there are three; viz., the theory of plethora, the ovulation theory and the third, yet nameless, which makes the uterus, not the ovary, the seat of the changes—the cause being the preparation for pregnancy.

The first point discussed is the origin of the ovary. The author seems to consider it unquestionable that the ovary arises from the hypoblast. But Balfour's papers on the development of Elasmobranch Fishes in the *English Journ. of Anat. and Phys.* '76-'77, seem to prove unquestionably that the entire urino-genital system of vertebrates arises from the middle layer, and that the existence of the mesoblast is a demonstrated fact, though its ultimate derivation is one of the "burning questions of modern embryology." Prof. Allen Thompson, in his inaugural address before the British Association, '77, gives a very plain statement of the question as it now stands, and seems to entirely agree with Balfour. Had we space, we should like to quote Prof. Thompson's words on this point, they are so lucid.

The second question that presents itself in searching for a theory of menstruation relates to the origin of the ovum. Is it one of the endothelial cells of the Graafian follicle, or is it an epithelial cell which has migrated hither from the epiblast? This is an important question, inasmuch as it is found that ultimate derivation has to do with function. We should say the origin of the ovum is still an open question, and so far as the "philosophical necessity" urged by, and quoted by our author, is concerned, viz., that the reproductive cell must be an epithelium because of its capacity for growth, it seems to us the same philosophy better applies to the formative cells of the middle layer. The possibilities of these cells are almost limitless, in formative power they rank the highest. To quote from Prof. Thomson's address: the exact seat of the origin of the reproductive cells is still a matter of doubt; they appear in the parental body at a very early period of its development, and clearly derive their origin from a deeply seated part of the formative cells which are undergoing transformation into the primitive organs. If this means anything, it certainly means that the ova are derived from the middle layer.

It is well established, as the author shows, that not only the follicles, but the ova also are matured before puberty, so that the function of the ovary is not a function of adult life only, but of childhood as well. The point to this fact is the absence in childhood of the great sexual disturbance which the theorists attach to the functional activity of the ovary.

The ten laws of Pouchet are next reviewed, and objections are made to the following; viz., that the shedding of the ovule is marked by periodical surexcitation of the genital organs; that the menstruation of women corresponds to the phenomena of excitement manifested at the mating season in certain animals, and that fecundation is in constant relation with menstruation.

Pflueger's theory, viz., that the gradual accumulation of sexual irritation in the ovary finally determines by reflex transmission the afflux of blood to the uterus and ovaries, which constitutes the flow, is essentially the theory of Prof. Jewell. *Jour. Nerv. and Mental Disease*, April, 1875. The explanation of the nervous mechanism by which the process is effected is, we believe, original with Prof. Jewell.

Our author does not dispute the periodical hyperæmia, but she does dispute the sexual element in ovulation. It, ovulation, is essentially a process of nutrition which does not call into action any special nerve centers any more than does any other nutritive process of the body. The sexual part of reproduction is inconstant, it may or may not take place, but the nutritive part is constant, dependent upon the internal nutritive powers, and not upon external circumstance.

While admitting the hyperæmia, the author affirms that the rupture of the vesicle must be considered the "consequence, not the cause of the rise in vascular tension."

Rouget's theory is next reviewed. Condensed it is the theory of erection, demonstrated principally by experiment on the cadaver. The objections made by the author are well nigh unanswerable. We have not space to quote them. The fifth statement, viz., that "erectile tissues, belonging to the sphere of animal life, are developed from the animal layer of the blastoderm, or epiblast, while the generative intestine of the women is derived from the nutritive layer or hypoblast," is a questionable statement. We believe that all the parts that go to make up the erectile tissues, such as blood vessels, connective tissue, etc., come from the middle layer, as does the entire generative intestine of both man and woman. We would say, in passing, that the main reason why the independent existence of the mezoblast is questioned, is because it is not found in the lower animals. It is not found simply for the reason it is not needed—the highly differentiated tissues are not found in these animals. All of this class of tissues spring from the middle plate.

The author next asks the very pertinent questions why the blood flows to the utero-ovarian plexus, and why it flows *from* the uterine mucous membrane. She reviews the theories of Pouchet (lax tissues), Kundrat and Williams (desquamation), and discards them all after answering them by good objections. The author's answer is that there is a necessity in the female economy for the periodical evacuation of a few ounces of blood—necessity so profound that if the ordinary mode of exit be closed the evacuation will, nevertheless, be effected elsewhere. There is in woman an excess of nutritive force and material, which, when not utilized in reproduction, is expended in menstruation.

While this is all very clear, we do not see that it answers the question why the blood flows to these parts in preference to other parts. We suggest that this general blood pressure might be relieved through the medium of the splanchnic, the same as in increased tension from other causes. The heart and great vessels are relieved by the vascularization of the abdominal and pelvic viscera, through the splanchnic division of the vasomotor system. Possibly we may have overlooked the author's explanation of why the blood is determined to the genital organs.

We would say, in passing, one of the greatest faults of the book is the lack of a complete index. There is frequently so much space between the asking and the answering of the questions, owing to the complicated and very exact investigations made by the author, it is difficult to bring the questions and answers together. A good index would be a great assistance.

In answer to the question why the blood flows *from* the uterine mucous membrane, the statement is made a good way farther along that the tension becoming excessive from the accumulation of blood the closed system of the circulation gives way at its weakest point, viz., the fatty degenerated uterine decidua.

With the hypothesis that the menstrual period represents the climax of nutritive force and material, the author proceeds to trace the rhythmic wave by the excretion of urea, the tension of the arterial system, the rise of temperature, etc. From the tables given the deductions are that for a few days preceding menstruation the amount of urea excreted is increased above the average of the inter-menstrual period; this excess diminishes during and markedly decreases after the flow.

The next measurements are of the pulse and temperature. The rise and fall of the temperature corresponds pretty well with the amount of excretion of urea. The pulse is not constant, but the assertion that the pulse is lowered is not justified. The third measurement is that of muscular force, both by the hand dynamometer and by the lifting of weights. The measurements taken justify the conclusion that the week preceding menstruation is one of increased muscular strength.

The next measurement is that of arterial tension—sphygmographic traces of the radial artery. The conclusion is that there is a rhythmic wave of plenitude that reaches its maximum from seven to eight days before menstruation, and has its minimum from one to four days after menstruation.

The cause of this rhythmic wave is attributed not to the heart nor to any obstruction, but to an increase in the mass of blood, and good reasons are assigned. It is characteristic of the essay that no theories are discarded and none are advanced without reasons, not merely one or two but a very host.

We would call especial attention to the distinction the author clearly makes between "irritative rise of tension," a pathological condition, and the physiological type in which the tonicity of the arterial wall is increased along with the increase of pressure—hence no general nervous disturbance as in the other type. In regard to these experimental investigations too much can not be said in praise, they manifest the thorough painstaking scientific spirit. We can but regret with the author that the measurement of the blood corpuscles and of the carbonic acid could not be added to the list, but we are glad to know that they are promised.

Whence is this nutritive material obtained? The author's answer is, from the motor system, whether nerve, bone or muscle. The argument is at puberty the system begins to refuse a certain amount of nutrition, which constitutes a margin for reproduction. The ground being taken that the cost of reproduction is greater in woman than in man, and the excess in this direction means a deficiency in some other, viz., the motor apparatus. Hermann's theory that the cost of reproduction is the same for both sexes, is merely mentioned; but we think it worthy of much consideration. If, as our author affirms, and as is well known by all physiologists, the generative organs correspond in number and function, why should there not be the same correspondence in generative force? The author makes

the statement, also, that women eat less than men. From our own personal observation, we should say this is not true. We believe one of the effects of a normal pregnancy, is to increase the appetite; and our observation has been that, ordinarily, women eat as much as, if not more, than men. At all events, we think this point well worthy of investigation. Special attention is called to the statement, that while the quantity of motor force, nervous or otherwise, generated by women is less than in men, the tone of the motor system must be just as perfect, the elaboration of the structure of the motor apparatus is in no way inferior, the anatomical conditions of sensibility and thought remain the same. Here is an apparent, if not a real contradiction. How can we reconcile this complete condition of one part with the deficiency of the other? We find further along that the author follows out and applies the logical conclusions of her reasoning, based upon this motor deficiency: "As the characteristic bodily deficiency is lack of muscular strength, so the characteristic mental deficiency should be lack of power of attention. The mental act of attention, requires processes in nerve centres closely analogous to those which precede muscular action, if indeed the motor centres themselves be not always called into activity." This agrees with another statement; viz., that *all* intellectual actions require muscular actions for their expression; and both statements agree with the argument of the essay; viz., that the motor system of women is inferior to that of men; but the whole argument contradicts the statement of the author that the organs of sensibility and thought are not encroached upon. If thought be in any way dependent upon motion, and motion be lacking, how can thought or its organs be complete? It seems to us that the application of the argument can but prove the mental inferiority of women. It is a fine theory to say that muscle force and mental force correspond; and yet what is really the history of mentality as compared with muscularity? We are not prepared to say. We merely make the suggestion. Yet we do know that there are notable cases among men and women of great intellectual power with great muscular weakness.

Because of this lack of power of attention, and back of that again lack of motor power, the *difficulty* of woman's work bears no kind of proportion to its effect upon the health. The remedy suggested is not to decrease the amount of work, either mental or physical, but to interrupt the work frequently. The statement that eight hours work would cause less fatigue in two sessions than in one is as true of men as of women. It is not so much the amount of work that fatigues as it is the number of consecutive hours one works. The "breaking down" so common among both sexes, is largely due to long uninterrupted hours of work. The author found the same thing to hold true in school-life; not the prolonged but the uninterrupted hours of study told upon the health.

Another contradiction to this sound mind in sound body question, is the peasant woman. More muscular even than her husband, why should she have imperfect nerve centres?

The author explains it by saying, the nutritive balance is disturbed. We suppose by this is meant that there is a physiological type for the motor system of woman. If that is overdeveloped it is done at the expense of the nerve centres, which centres can not bear the strain of the rise in vascular tension at such menstrual period. The peasant woman's muscular strength then is really pathological and not physiological. It is as much beyond as that of most women is below the normal standard.

The writer makes the distinction between individual and supplemental nutrition very clear—the one is for the use of the individual, and the other for reproduction, and that in general the supplemental will be maintained even at the expense of the individual, hence the most delicate women continue to bear children. The function of menstruation belongs to vegetative rather than animal life, and is analogous to the provision made at the nodes of plants for the development of branches.

Under the head of muscular functions the author states, "It has been demonstrated that the contraction of muscles during exertion is attended by an increased excretion of carbonic acid, while the excretion of urea remains the same. This is positive proof, and is accepted as such by all physiologists, that the heat required for the production of motor force is not derived from combustion of the albuminous parenchyma of the muscle, but of the substances, principally hydrocarbonaceous, contained in its juices." We must beg leave to differ with the statement that this is accepted by all physiologists. Prof. Austin Flint, Jr., has certainly earned the title of physiologist in its best sense, and his valuable experiments on this question, so well known to all physiologists, at least suggest that the question is still an open one. Still another contribution from Prof. Flint on this same point is promised (in the *English Journal of Anatomy and Physiology*, if it has not already appeared in the last issue not yet seen by us). The effects of muscular exertion are not positively proved, Pavy to the contrary notwithstanding. The theory of Liebig, viz., that the tissue evolving force was itself oxidized, has been disputed ever since it was propounded, but continued to be accepted till overthrown by Fick and Wislicenus, in their famous ascent of the Faulhorn. In 1871, the theory was reinstated again by Flint, in his observations on Weston. Pavy, in his observations on the same pedestrian, is attempting, since 1876, to overthrow this theory of Liebig and Flint, which the latter is attempting, as earnestly and scientifically, to maintain. Thus the question stands.

With regard to the nutrition of the nerve centres, the author adopts the hypothesis of Wundt,—dividing the process into "negative or internal work" and "positive or external work."

We agree with the statement that there is a great deal of

loose thought about the "waste of nerve substance," "defective nutrition of the centres," etc., and we are almost forced to believe that there is such a thing as "functional" disease of the nervous system without organic disease; but we are hardly prepared to conclude there is no parallelism between the activity of the nutrition or function of nerve centres, and of muscles. The law of the correlation of motions which is maintained throughout the essay, is violated in this statement.

We cannot see that the chemical process of muscle nutrition is analysis, while that of nerve nutrition is synthesis. Is it true that muscular tissue is simpler in chemical structure than the albuminoid substance that feeds it? We supposed that any tissue was not only physiologically and histologically, but also chemically, higher, more complex, than its elements. The "negative" and "positive" work of Wundt, are only other names for potential and active energy, and are as true of muscle as of nerve. Is the process of muscle repair a simple oxidation? We know this is true of muscle waste, but we did not know that the two processes were identical. Indeed we did not know that the great problem of assimilation had been solved at all.

Having thus considered the arguments, had we space, we should like to restate the questions as asked and answered by the author; but we must refer the reader to the essay itself for this. We can state but one—Is there anything in the nature of menstruation that should lead us to expect a necessity for physical and mental rest, even when no pain is experienced? the capital question of the essay. "There is nothing in the nature of menstruation to imply the necessity or even the desirability of rest for women where nutrition is really normal."

According to the author's own showing, the equilibrium between the supplemental and the individual waves of nutrition is such an uncertain affair, that Pallen's "neuric causes," or as the author terms it, "an epiphenomenon" may as well be admitted in fact if not in theory. If it cannot be shown that there is an equally delicate equilibrium in the other sex, whose disturbance is attended by consequences just as disastrous, then is it true that woman is unequally burthened, and the extra provision which nature makes for the extra cost of reproduction, is made null and void by the conditions imposed—conditions almost impossible to fulfill. Admitting all that the author claims, the very fact that nature has made such a fine point in balancing these reproductive and individual forces, makes woman an exceptional being. Yet, we consider the author has made a valuable contribution to science on this question of menstruation. Not only that, but it should prove a great boon to the race. The minds of women should be disabused of the hereditary sentimentalism that often surrounds this physiological function, converting it into a disease. The writer has clearly shown that much of it is morbid, as in the class that are disappointed in marriage and have no occupation.

We wish that a clear statement of the argument and the conclusions might be placed in the hands of every woman. It might inspire each one to at least try to find and keep that almost impossible equilibrium, so beautifully demonstrated by the author. The book as it is can never be understood by the unprofessional. Indeed its one great fault as a scientific work is its cumbersome style.

S. H. S.

III.—THE WEST RIDING LUNATIC ASYLUM MEDICAL REPORTS.

THE WEST RIDING LUNATIC ASYLUM MEDICAL REPORTS. Edited by J. Crichton Browne, M. D., F. R. S. E., and Herbert C. Major, M. D. Volume VI. London: Smith, Elder & Co. 1876. 309 pages.

The sixth volume of this very valuable medical annual, contains thirteen papers, nearly all of decided value, and some of special interest. It would not be practicable to give here abstracts of them all, and we will only endeavor to notice the more important.

The first article in the volume is that by Dr. Herbert C. Major, on the Histology of the Island of Reil. The position, morphological history, and the pathological evidence of its possessing certain special functions, give to this portion of the cerebrum a peculiar interest and render the solution of the questions which the author sets himself to solve particularly desirable. Dr. Major sought to find whether (1) there was any difference between the arrangement of the layers of the cortex, the size of the cells, the vessels of the insula and those of other portions of the brain; (2) whether there was any difference in structure of the various gyri of the insula between themselves; (3) whether there was any difference between the corresponding parts in the right and left hemispheres, and (4) whether there was any difference in the union of the white and gray matter of this and other portions of the brain. His results were that there was generally none of these differences, only in the third layer of the insular cortex the cells were a little smaller than those of the vertex. These results negative as they are, are of value, the only peculiarity, that of the cells in the third layer, being suggestive, as it is in this layer that the degenerative changes described by the author and others are most frequently observed.

The article by Dr. Rabagliati, on the classification and nomenclature of nervous disorders, seems to contain some good ideas, but we can hardly agree with it as a whole. The classification he recommends is chiefly etiological and it has the disadvantages